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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/638,079	08/14/2000	Thomas H. Distefano	TESSERA 3.0-081 DIV CONT	1035

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EXAMINER

DANG, PHUC T

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 11/29/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/638,079

Applicant(s)

DISTEFANO ET AL.

Examiner

Phuc T. Dang

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on election filed on September 17, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-41 is/are pending in the application.
- 4a) Of the above claim(s) 11-21 and 31-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-10 and 22-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

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DETAILED ACTION

1. This application is a continuing of 09/188,599 filed on 11/09/1998 (Patent No. 6,107,123) which is a divisional of 08/610,610 filed 3/7/1996 (Patent No. 5,834,339).

Pre-Amendment

2. Claim 1 has been canceled by the Pre-Amendment filed on November 30, 2000.

Election/Restrictions

3. According to the request of Applicant's election filed on September 17, 2001, the election has been acknowledged by Examiner as follows:

Group I, claims 1-10 and 22-30, draw to a manufacturing and method of providing a substantially void-free underfill for a flip chip assembly and injecting an encapsulant between a face surface of a semiconductor chip and a juxtaposed substrate, classified in class 438, subclass 125.

Group II, claims 11-14 and 31-34, drawn to a manufacturing and method of treating an interposer layer for a semiconductor package assembly to provide a substantially void-free interposer layer, classified in class 324, subclass 754.

Group III, claims 15-21 and 35-41, drawn to a manufacturing and method of creating a void-free interposer layer for a microelectronic component, classified in class 439, subclass 85.

4. Because these three inventions are distinct for the reasons given by restriction filed on June 18, 2001 before and have acquired a separate status in the arts as shown by either different classification, restriction for examination purposes as indicated is proper.

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5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amended of inventorship must be accompanied by a diligent-filed petition under 37 CFR 1.48(b) the fee required under 37 CFR 1.17(h).

Information Disclosure Statement

6. The office acknowledges receipt of the following items from the applicant:

Information Disclosure Statement (IDS) filed on November 20, 2000.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 2-4 and 22-24 are rejected under 35 U.S.C. 102 (a) as being anticipated by Akram et al. (U.S. Patent No. 6,048,656).

Akram discloses a method of providing a substantially void free underfill for a flip chip assembly comprising electrically connecting a plurality of contact pads on a surface of a semiconductor chip corresponding bond pads on circuitized substrate such that the connections create a gap between the chip and the substrate, wherein the substrate is rigid; sealing the gap between the chip and the substrate with a fluid, curable encapsulant so that there is a void therebetween; applying pressure to the assembly causing the encapsulant to flow into the gap and around the connections; and applying energy to the assembly in order to cure the encapsulant [col. 4, lines 24-col. 8, lines 32].

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Akram also discloses the pressure applying includes gradually increasing the applied pressure and step is conducted for a time of period that is between 30 minutes to several hours [col. 5, lines 53-59].

8. Claims 5-10 and 25-30 are rejected under 35 U.S.C. 102 (a) as being anticipated by Akram et al. (U.S. Patent No. 6,048,656).

Akram discloses a method of injecting an encapsulant between a face surface of a semiconductor chip and a juxtaposed substrate comprising providing a gap between the face of the chip and the substrate, where the substrate is rigid, sealing each edge of the gap with a curable fluid encapsulant so that there is a void between the chip and the substrate; applying pressure to cause the encapsulant to flow between the chip and the substrate; and applying energy to cure the encapsulant [col. 4, lines 24-col. 8, lines 32].

Akram also discloses the pressure applying includes gradually increasing the applied pressure and step is conducted for a time of period that is between 30 minutes to several hours [col. 5, lines 53-59] and the applied pressure is between about 10 and 450 pounds per square inch and 30 and 200 pounds per square inch [col. 5, lines 53+] the gap providing step includes providing compliant pads on the substrate, wherein each of the compliant pads includes a peelable tacky surface to which the face surface of the chip is releasably attached [col. 4, lines 24+].

9. Akram discloses the claimed invention except for the process parameters as claimed in claim 3, 8-9, 23 and 28-29. However, the selection of the claimed process parameters would have been obvious to one having ordinary skill in the art at the time the invention was made to eliminate the voids and bubbles within the encapsulant, since it is well settled that when the general conditions

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of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuc T. Dang whose telephone number is 703-305-1080. The examiner can normally be reached on 8:00 am-5:00 pm.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on 703-308-4910. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

12. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Phuc T. Dang PD

Examiner

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David Nelms
Supervisory Patent Examiner
Technology Center 2800

November 8, 2001